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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,239	07/31/2001	Ward B. Bowen JR.	81749AJA	2816

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EXAMINER	
WALKE, AMANDA C	
ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/919,239	Applicant(s) BOWEN ET AL.	
	Examiner Amanda C Walke	Art Unit 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makuta et al (5,683,853) in view of Newmiller et al (4,865,964) and McDugle et al (4,933,272) and Keevert, Jr et al (4,945,035).

Makuta et al disclose a silver halide photographic material comprising a high chloride {100} grain emulsion. The grains are preferably at least 95 mol% chloride with 1 mol % or less silver iodide, and the rest being bromide (column 62, lines 31-67). The grains may be core/shell grains. The reference further teaches that the grains of the reference may have added to them a metal ion salt, preferably added during grain formation. This dopant may be added to the core, the shell, or to the entire grain. Included as suitable are both 6 and 4 coordination complexes, which may employ Mg, Mn, Fe, Co, Ni, Cu, Zn, Ru, Rh, Pd, Re, Os, Ir, Cd, or Pb as the metal among others. Preferred ligands include, Br, Cl, NO_3, CN, H_2O, NH_3, nitrosyl group, thionitrosyl group, and a carbonyl group. One or more dopants may be used in combination (column 67, line 57 to column 68, line 17). The reference teaches that the emulsions may comprise a mixed emulsion. The reference cites Newmiller as exemplifying a mixed grain emulsion comprising grains of different forms. Given the other teachings of the reference, the examiner is interpreting "different forms" as encompassing halide content/distribution, grain structure, twinned or non-twinned crystals, and grains having different additives (column 63, line 1- column 64, line 30).

Newmiller et al disclose a silver halide material comprising blended emulsions. A speed-granularity advantage is achieved when the emulsions are used. The emulsion contains a first component comprising 10 to 90 % of a high aspect ratio emulsion and 90 to 10 % of a low aspect ratio emulsion (column 2, lines 15-49). Although the reference prefers that the grains of the reference are silver bromide or iodobromide grains, they are not limited thereto. The grains may be doped to modify their photographic properties such as speed, stability, and contrast. One or both of the emulsions may be doped, meaning that they are independently treated and do not require that they are doped in the same manner (column 4, lines 9-30). The examples use each emulsion in an amount of 50% of the total weight of the emulsion, which meets the limitations of the present claims 1-3.

Keevert, Jr. et al disclose an internally modified {100} high chloride emulsion (at least 85 % chloride) that has been doped by a hexacoordination complex. The complexes contain a rhenium, ruthenium, or osmium metal ion, and at least 4 or the ligands are cyano ligands as required by the present formula (I). The addition of the dopant increases the sensitivity of the emulsion (column 5, lines 9-55 and column 6, lines 32-60). The dopant is added in an amount of 1×10^{-6} to 5×10^{-4} mole per mole silver meeting the limitations of the present claims 1, 4, and 5 (column 9, lines 51-66). A preferred complex is $[Ru(CN)_6]^{-4}$ (see example 4).

McDugle et al disclose a silver chloride {100} emulsion (containing at least 85 mole percent chloride) wherein the grains have been internally doped with a complex meeting the limitations of the present formula (II). The metal ion is preferably ruthenium or osmium. The dopant is employed preferably in an amount of less than 1×10^{-4} mole per mole silver, preferably in an amount of 1×10^{-9} to 5×10^{-5} mole per mole silver (column 14, lines 5-24). The addition of

the dopant into the grains results in a desirable increase in contrast and decrease in speed (see examples). The reference teaches that parameters such as speed, contrast, fog, pressure sensitivity, high and low reciprocity failure, and latent image keeping are all important in achieving acceptable photographic performance although the reference teaches that an increase in contrast and a reduction in speed (sensitivity) is desirable for that invention. The reference further teaches that in a large percentage of circumstances high sensitivity (speed) is desired. The reference therefore teaches that tailoring these properties to meet a specific image requirement is contemplated (column 4, line 64 to column 5, line 56). Therefore, this would imply that in these instances, one of ordinary skill in the art would have been motivated to combine an additive that provided high contrast but also decreased the speed (sensitivity) with an additive that would increase the speed to even out the sensitivity. A preferred complex is $[Os(NO)Cl_5]^{-2}$ (see example 2).

Given the teachings of Makuta et al that the {100} silver chloride emulsions of the reference may comprise a mixed emulsion comprising two emulsions each having a different form of grains as taught by Newmiller (cited by the reference), it would have been obvious to one of ordinary skill in the art to dope one emulsion in the manner of Keevert, Jr et al to obtain an increase in sensitivity and one by the method of McDugle et al to achieve a desirable increase in contrast and decrease in speed, with reasonable expectation of achieving a photographic material having increased storage stability (see column 107).

With respect to the limitation of the present claim 1 which requires that the first fraction contain formula (I) in an amount of at least 10^{-7} mole per mole silver and *less than* 10^{-10} mole per mole silver of formula (II) and the second fraction to contain formula (II) in an amount of at

least 10^{-10} mole per mole silver and formula (I) in an amount of *less than* 10^{-7} mole per mole silver. It is the examiner's interpretation that "less than" includes zero. The combination above having one of the two emulsions doped by formula (I) alone (preferred amount being 1×10^{-6} to 5×10^{-4} and the other doped by formula (II) alone (in an amount of 1×10^{-9} to 5×10^{-5}) would meet these limitations.

3. Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makuta et al in view of Newmiller, McDugle et al, Keevert, Jr, and Research Disclosure 437013.

All of the references except for the RD have been discussed above. Makuta et al discloses that the material may be exposed in a digital exposure method employing a printing system and a laser or a light emitting diode in a pixel-by-pixel modes for a time of 10^{-4} sec or less, preferably 10^{-6} sec or less. The reference does not specify the preferred exposure dose (column 73, line 37 to column 74, line 25).

RD 437013 teaches that it is conventional in the art to perform a digital printing method as described by Makuta et al using an exposure dose of actinic radiation of at least 10-4 ergs/cm2, typically in the range of 10-4 to 10-3 ergs/cm2 for exposure times of up to 100 microseconds, or possibly up to 10 microseconds, or even 0.5 microseconds (section XIV).

Given the teachings of the RD that these exposure doses are conventional in the art, and that the Makuta et al reference teaches similar exposure times, it would have been obvious to one of ordinary skill in the art to prepare the material of Makuta et al in view of Newmiller, McDugle et al, and Keevert, Jr. et al using the conventional exposure dose for the exposure method and time of Makuta et al with reasonable expectation for achieving a material have increased storage stability.

Response to Arguments

4. Applicant's arguments filed 10/15/2002 have been fully considered but they are not persuasive.

Applicant has argued that the examiner has failed to establish a prima facie obviousness position because applicant states that there is no teaching or suggestion to employ any of the specific dopants in different grain fractions.

Specifically, it is argued that the combination of Makuta and Newmiller is based solely on hindsight because Newmiller prefers silver bromide or iodobromide grains whereas Makuta teaches a high chloride emulsion. As described above, Makuta et al does disclose a method of making a high chloride grain emulsion. However, the reference specifically cites the Newmiller reference as demonstrating the use of an emulsion having grains of "different forms", despite the fact that the reference prefers grains of a much different halide content. Given the fact that Makuta cites this reference as demonstrating a suitable variation for its high chloride emulsion despite the fact that the reference is drawn to a silver bromide emulsion, the reference teaches that the modification of the high bromide emulsion of Newmiller is also suitable and advantageous in a high chloride emulsion such as that described by Makuta. Thus, the primary reference does provide a teaching or suggestion to one of ordinary skill in the art to prepare an emulsion containing two grain fractions of different forms, each which may be doped independently. Also, the different fractions may be independently chemically sensitized, and spectrally sensitized as well (column 4,line 9-60).

Applicant has next argued that the examiner's interpretation of "different forms" is improper. The applicant states that "different forms" only refers to the mixing of tabular grains of different aspect ratios. The examiner believes that her interpretation to be proper. Within the discussion of the grains of the Newmiller reference it is taught that the grains may vary in halide content (column 3, line 61- column 4, line 8), aspect ratio (column 3, lines 1-16), grain shape (column 3, lines 33-43), and size (column 3, lines 43-50). This is all taught in the discussion of the variations in the suitable types of grains, thus, absent evidence to the contrary, the examiner believes that all of these variations would be "different forms" of grains, and not just those having varying aspect ratios as the fractions may also differ in these ways and not just in the aspect ratio of each.

With respect to applicant's argument that there is no teaching or suggestion to dope the fractions individually with the dopants of the Keevert and McDugle references, the examiner maintains her position. The Newmiller reference clearly teaches that the fractions may be independently doped to modify photographic properties such as speed, high or low intensity reciprocity characteristics, stability, and contrast, and are preferably internally modified (column 4, lines 9-20). The Keevert (increases sensitivity) and McDugle (increase contrast) references disclose internally modifying dopants meeting the limitations of the present formula I and formula II, which result in an increase in the photographic properties mentioned by Newmiller, which would be the motivation to employ these dopants. Also as stated previously, the reference further teaches that in a large percentage of circumstances high sensitivity (speed) is desired. The reference therefore teaches that tailoring these properties to meet a specific image requirement is contemplated (column 4, line 64 to column 5, line 56). Therefore, this would

imply that in these instances, one of ordinary skill in the art would have been motivated to combine an additive that provided high contrast but also decreased the speed (sensitivity) with an additive that would increase the speed to even out the sensitivity. Thus, the examiner is maintaining her position.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C Walke whose telephone number is 703-305-0407. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Amanda C Walke
Examiner
Art Unit 1752

ACW
December 19, 2002

JANET BAXTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700